REMARKS

Claims 1-36 are pending in the application.

Claims 1-21 are withdrawn from consideration.

Claims 22-29 and 31-36 are rejected.

Claim 30 is objected to.

Claim 32 is rejected under 35 U.S.C. 112.

Claims 29 and 31-36 are rejected under 35 U.S.C. 102(e).

Claims 22-28 are rejected under 35 U.S.C. 103(a).

Claims 22, 26, 29 and 32 are currently amended.

No new matter is added.

Claims 22-36 remain in the case for consideration.

Applicant requests reconsideration and allowance of the claims in light of the above amendments and following remarks.

Informalities

Claim 22 has been amended to make it more clear, understandable, and concise. No new matter has been added.

Claim Objections

Claim 26 is objected to because of the following informalities: the last line of the claim is incomplete. The line states that "an inter-gate dielectric layer interposed between the floating gate and." For purposes of examination it is assumed that the dielectric is interposed between the floating gate and the control gate.

Claim 26 has been amended to repair a clerical error. "...the control gate." has been added to the last line of claim 26. No new matter has been added. Support for this amendment can be found on page 19, lines 8-10 of the Specification, among other locations.

Claim 30 is objected to because of the following informalities: There is insufficient antecedent basis for the limitation of "...the central region of the first active region."

Claim 30 has been placed in allowable form by correcting the antecedence error objected to by the Examiner. "the central region" has been replaced by "a central region". Withdrawal of the objection is requested.

Claim Rejection – 35 U.S.C. § 112

Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant respectfully argues the rejection.

Claim 32 has been amended to correct a clerical error. No new matter has been added. All elements of claim 32 are disclosed in the Specification on page 15, lines 20-22, and FIG. 27. FIG. 27 shows all elements of claim 32 and their relation to each other. Namely, a distance (DT) between an upper corner of the first trench region (TC1) and a lower corner of the low voltage gate electrode (173c) is shown to be greater than the thickness of the low voltage gate insulation layer (171). Withdrawal of the rejection is respectfully requested.

Claim Rejection – 35 U.S.C. § 102

Claims 29 and 31-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim, et al., U.S. 6,642,105 B2 ("Kim").

Applicant respectfully traverses the rejections.

Claim 29, referring to FIG. 27 and page 15, lines 3-15 of the Specification, recites a first trench region (165c in FIG. 21) formed in the low voltage region C to define a first active region (115c, which is part of the substrate 151), the first active region having a protruded edge surface P. FIG. 27 is a close-up view of a region near the lower corner of the floating gate 173c (page 15, line 21). In this figure it is easy to see the protruded edge surface P. This protruded edge surface allows greater tunneling current capacity, improving device performance.

Kim does not show any protrusion such as that of claim 29. In FIG. 32 the top surface of the second active region 1b is flat with no protrusions. The Examiner has stated that the protruded edge surface of claim 29 is the chunk of substrate 301 that is between the two adjacent trenches 309 in active regions b. The applicants respectfully disagree. If Kim were to have a protruded edge surface then it would be shown as a small bump *on the top surface* of the chunk of substrate 301 that is between the two adjacent trenches 309 in active regions b. There is no such protruded bump, however.

Furthermore, claim 29 recites a first sloped region (SL1) interposed between a first trench region (165c) and a first active region (115c), the first sloped region having a first incline that is downwardly extended from the protruded edge surface (P). This is shown in FIG. 27 and discussed on page 15, lines 16-20.

Kim does not show a first sloped region, as in claim 29, for at least the reason that Kim does not show a protruded edge surface from which the first sloped region would extend.

For at least the reasons discussed above, Kim does not anticipate each and every element of claim 29. Therefore the applicants request withdrawal of the rejection and allowance of the claim.

Claims 31-36 depend from claim 29 and inherently include all of the limitations of the base claim. As discussed above, the prior art does not teach the limitations of the base claim much less the further embodiments of the dependent claims. It is therefore submitted that claims 31-36 are patentably distinguishable over the prior art and allowance of these claims is requested.

Claim Rejections – 35 U.S.C. § 103

Claims 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Prior Art Figure 3 (APAF) in view of Kim, et al. (U.S. 6,642,105 B2).

Applicant respectfully traverses the rejections.

The present application and the Kim patent are subject to common ownership by Samsung Electronics Co. Ltd., at the time the invention was made, and thus Kim cannot render applicants' present application obvious under 35 USC §103(a). Accordingly, applicants respectfully request that the rejections of claims 22-28 that are based in part on Kim be withdrawn.

Indication of allowable Subject Matter

Applicant thanks the Examiner for indicating that claim 30 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

For the foregoing reasons, reconsideration and allowance of claims 22-36 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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